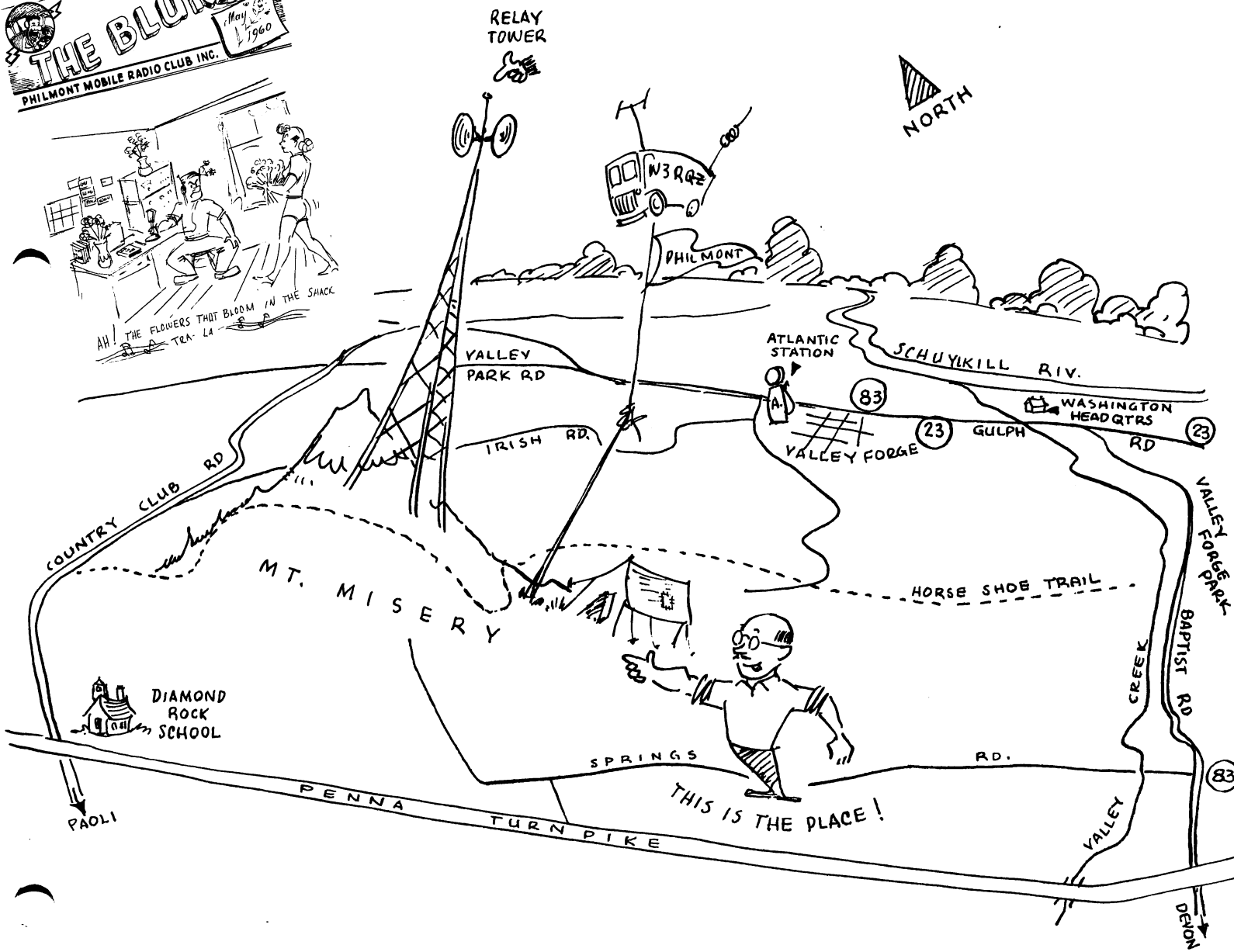
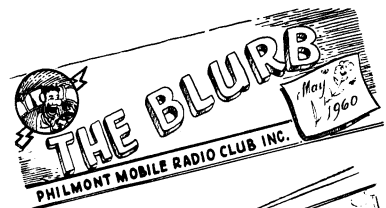




THE BLURB

PHILMONT MOBILE RADIO CLUB INC.

June
1960



THE BLURB

Published Monthly by the
Phil-Mont Mobile Radio Club

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No. 6

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The "Blurb" is published by and for the members of Phil-Mont to further the interest of Amateur Radio in general and Mobile Radio in particular. We endeavor to keep news accurate, interesting and in a small way, educational. Any deviation from this is unintentional. Copying and quoting is permitted, provided credit lines are included. Commercial use is not permitted and subscriptions are gladly exchanged with other radio clubs.

DEADLINES

The "Blurb" is mailed on the last Monday of the month. All material for the "Blurb" must be received by the Editor, ZPP, before the fifteenth of the month.

1960 CLUB OFFICERS

PRES. Hymen N. Hecht W3WNC
V. PRES. Lloyd Sherman W3CDY
SEC'Y Charles Greenwood W3GOW
TREAS. Tom Donnelly W3VCE
BRD. of DIR: W3's NIP, VVS, QQH, AWH, DOU
and all 1960 Club officers

MEETINGS

Regular meetings are normally held on the 1st Monday of the month. Check the Calendar at right for the exact date. Meetings are held at the FRANKLIN INSTITUTE at 21st St. and the Parkway, starting at 2000 hours. (8:00 P.M.)

NET and NET FREQUENCIES

Ch 1 - 294.93 kos Ch 3 - Unassigned
Ch 2 - 296.26 kos Ch 4 - 50.7 mcs
Scrambled egg net Weekdays 0730-0830
Ten on Ten Sundays 1000-1100
Blarney Sessions Anytime Ch 1 & 2
294.93 is monitored daily 0830-2400
for the benefit of mobiles in Phila area

FMFC CALENDAR OF EVENTS

June 6 Regular meeting 8 P.M. at the
FRANKLIN INSTITUTE
Program: Space Film

June 15 Mid-Month meeting
Qth W3VVS
2731 Hawthorne Road
Ardsley, Pa.

June 12 Half-Way Picnic with
Washington Mobile Radio Club
at Havre de Grace

June 25-26 Field Day

SEND ALL COMMUNICATIONS FOR THE BLURB
TO THE EDITOR, ZPP

WHAT Well Known PHIL-MONT couple the
Hawaiian Weekend In WASHINGTON and Stayed at
The Diplomat MOTEL for ONLY \$9 THE
Discount Rate WAS \$14 ?

THE PREZ SE2:

Summer has finally arrived and if you followed your Prez' advice of last month you now should have your mobile all squared away with the weak tubes replaced, the sticky relay no longer sticky and the intermittents eliminated. You are now ready. Ready for what? You are now ready to take part in Philmont's mobile Field Day, of course. You will be surprised how little effort is required and with reduced power, how easy it is to build up a mobile score. The nice part about this kind of operation is that you can participate while driving down to the corner drug store, while waiting for the XYL to finish the shopping or taking the family out for a drive. If you really want to have fun make up a team of three mobiles and enter Philmont's free dinner contest. Win or lose, you will be able to have dinner with the boys and this, take your Prez' word, can be more enjoyable than the whole Field Day operation!

Prior to Field Day, on June 12, Philmont has another outstanding activity, the Half-Way picnic with the Washington Mobile Radio Club at Havre de Grace. These picnics in the past have been most enjoyable and this one promises to be the biggest and best yet. So keep your ear tuned to the frequency and join the caravan to Havre de Grace.

de WJWRC

WATCH YOUR STEP --- ON THE GAS

We have all seen headlines such as "Autos Take Greater Toll of Americans Than Wars". WE are coming into the season of greater mobile activity. Not only for Hams but for all drivers. BE ALERT! DON'T GET HURT. It has happened to all of us I am sure, where we have slipped a little in our alertness.

Stop and think of your last trip in your car. Can you honestly remember every intersection every light??? If some one were to say to you that you passed a Red-light could you really be sure they were wrong? After driving for years and for thousands of miles we are apt to let things become too automatic. Don't let this happen to you. We want to see all our members at all of our meetings.

THIS MONTH'S COVER

The picture in the inset was to be for the May cover. WJQCV came through with some mighty fine pictures of the Franklin Institute and we used one of these. This Editor not wanting to waste Sam Kuncovich's art work, insisted that we use it somehow. Thanks to a very cooperative staff... everybody is happy.

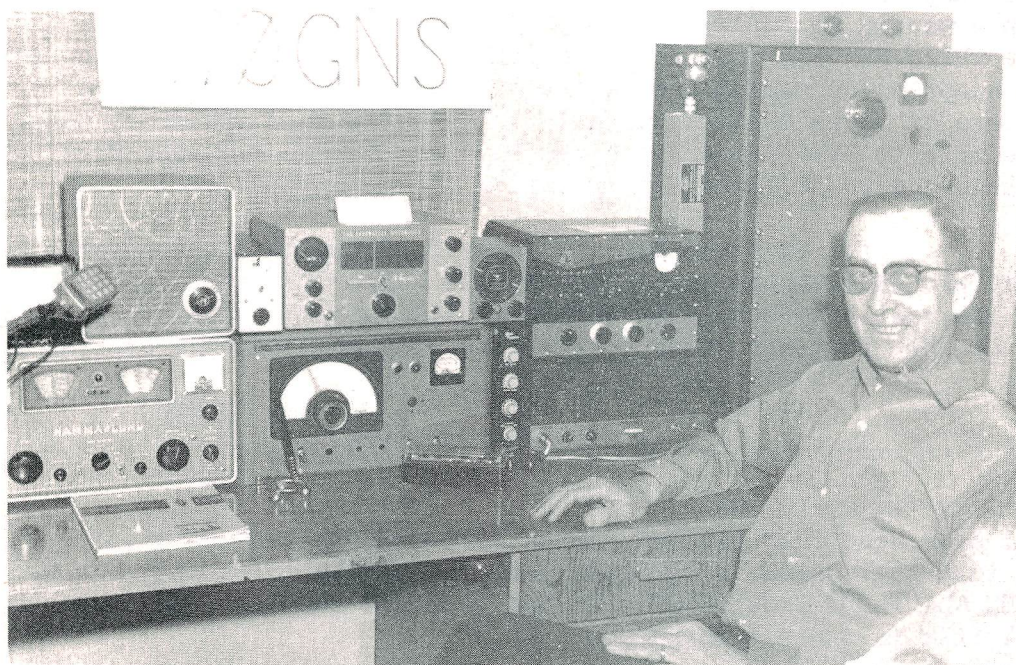
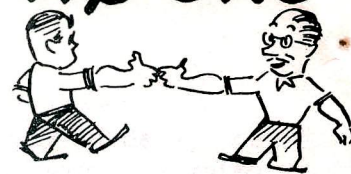
Mid-way Picnic JUNE 12th

Midway picnic to be held at Havre de Grace, Maryland on June 12th. All who have joined us there with the Washington Mobile Radio Club in the past need no urging to attend this year. For those of you who have not made the Mid-Way picnic in the past, pack a lunch and come on out for a grand time. This is a family affair from Pop all the way down - come one - come all. 11 A.M. starting time for the festivities.

The photograph on the back of this sheet is one of Phil-Mont's distant monitoring stations... when the band is open!!!

STEP UP AND MEET, WØGNS

by W3YHV



Step up and meet WØGNS, Lewis E. McFall of Minot, North Dakota.

Born in Minot, 1907, a high school graduate, joined the CAA in 1941, worked in Hawaii and several other states, presently a Flight Service Specialist with the same outfit.

Lew has about 60 Phil Mont Stations logged to his credit, but working 10 meters and mobile go way back in his Ham record. Lew's mobile activity goes back to a 5 meter rig in a "Maxwell" and membership in the old "Ten Meter Gang", receiving a sheet regularly from ARRL at the time ten was nothing but CW.

Lew's rig as pictured above shows a neat shack with a home brewed 813, 250 watt final that puts out a fine signal in these parts along with an operator who has been a real asset to Phil Mont Mobiles, by relaying traffic and just plain rag chewing to give us mobilers company.

Six meters is his favorite band with "WAS" on six just a few New England States short. Using a Lunenburg long-

John 6 element beam 45 feet high, Lew was the only North Dakota station to work KG1EN on Fletchers Ice Island in the Artic, besides several Alaska and Hawaii contacts.

Ham radio is an important part of GNS's life by serving as president of the Minot Amateur Radio Club, convention chariman of the North Dakota ARRL convention scheduled for July 30-31, public service awards for communications during blizzards and code class instructor in adult education night school for several years.

Lew tells us he is a silent partner in a Beauty Shop in the lower level of his home where his XYL is the chief OP and incidently a real fine hairdresser, and a member of the state hair fashion committe. His chief accomplishment is maintaining good terms with XYL in spite of large expenditures of time and money in pursuit of his Ham activities.

WØGNS "Gold"- "Nickle"- "Silver" the blurb extends you 73'S.

BALLOON FLIGHT

As this edition is being written prior to the balloon flights that were held on May 28th at Garden State Race Track we have nothing to report. We don't even know if W3JIL will be in one of the balloons when they go aloft. Perhaps we will have more to report in the next issue.

This editor worked W8RRM, Zale, mobile on the Turnpike. Zale tells me that they monitor 29616 at Zanesville, Ohio, just about 24 hours a day. The XYL's monitor during the day and mornings and evenings the OM's take over. I used a Channel 2 rock and did OK. So anyone heading out that way and wanting a contact, keep 29616 in mind. W8RRM also tells me he may be settling down in Wayne, Penna. soon, and will be happy to visit Phil-mont.

MONTGOMERY COUNTY AREC

The Montgomery County AREC net time has been changed to 7 P.M. Thursdays on 29520 Kcs. All are welcome.

10 Meter Handi Talkie

Every one who was present at the May meeting got a chance to look at and demonstrate the transistor 10 meter Handi Talkie by W3KKO, Bill Engle, Jr.; this item was written up in the February issue of WST 1960. Bill was kind enough to provide schematics for all in case you missed it in QST and to enable the group to follow his run down of the equipment. W3KKO started his talk with an explanation of transistors and their construction, giving us a real fine insight to the transistor. The equipment is useful for emergency use and CD work and activities where compactness and light weight are essential, but long range is not needed. After the talk, Bill and some of the fellows worked W3TKQ with the Handi Talkie.

CHANNEL CHATTER

Keep 29493 HOT ---Good time was had by all at W3UMK's-scene of May Mid-Month. There was some doubt about the host showing up - he arrived late tsk! tsk! tsk! those in attendance were W3DJW, K3DJE, W3OEC, W3YHV, W3D4G, W3OMK, W3DOU, W3GOW, W3EQZ, W3PST, W3CDY W3QQH, K3GFM, W3WNC, W3ZPP and guess who??? W3QZO! ---W3LKI checking into net - How about getting to a meeting, Ben? ---W3CNO in Florida ---W3FWI finally got Hornet tri-band up now looking for coax switch ---W3DJW referring to the Blurb as the scoop (as one of our 100% Phil-Monters says, "You can't serve two masters") ---K3GFM getting to be famous nation-wide...we have 12 requests for his converter diagram, from 12 states ---Where is W3IW, guess we better take that new Chevvy away from him ---W3AHP looking into the possibility of some GE transistor Power Supplies (count me in Hal) ---In Phil-Mont, Nearly Everybody Reads the BLURB ---W3LEM seen under the hood of W3DOU's T-Bird ---For those of you who missed the Washington Luau - you shudda been to the May meeting - W3QQH did a Hawaiian Eye giving an excellent run down on the trip and even gave W3YJM and W3AWH some additional souvenirs ---W3BFH has an antenna farm for sale in King of Prussia, Tom is moving to Boston way and will leave all antennas up if Ham buys the 3½ acres ---W3PWG mobile out of commission until converted to 12 volts - for new Country Sedan ---W3UMK's basement full of old gear destined for future auction ---W3QZO led W3UMK out the express-way other day with long rectangular carton in the back of his car - Dick says it didn't look like radio gear ---W3QZO to fix up Comm Truck with antenna for 75 for Field Day ---Many clubs in Delaware Valley providing gear and operators for Boy Scouts project ---W3GBA 160 meter balloon supported vertical is down for good - Sam broke the balloon and all that genuine hydrogen got loose ---W3VVS gets fine signal on 1819 kc at W3D4G. Ernie

has a FB receiver but a lousy "S" meter ---It has been reported that W3LNQ has snow tires on all four wheels - he says he is ready for Field Day ---Rumor has it that W3QQH's new electronic garage door opener hit the windshield of his car when he backed it out half way to test his 10 meter rig - Spence needs cleats on his track shoes --- You ain't seen nothing until you see W3YJM hula ---This Editor received in the mail some very nice art work which came in without signature and read as follows: "What well known Phil-mont couple attended the Hawaiian weekend in Washington and stayed at the Diplomat motel for only \$9.00 when the discount rate was 14.00 ---Sure could use the senders talents on the Blurb staff

SWAP AND SHOP

For Sale: B&W 5100B
SX100
Match Box
Mono Monitor
Heath SWR Meter
D104 Mike

Blue Racer Bug
40 ft. crank-up Tower
TR-4 rotor/cntrl & 100 ft 4 cond cable
10, 15 M. Quad

All for \$700.00 Call during day EV 2-4700 ask operator for TV master control - Bill Maldonado, W2VPJ.

Gonset GSB101 linear KW Amp.
Orig. price \$450.00 - make offer. Jack-Tilden 5-2730 K2JKA

Coax Fittings, fuse holders, tube sockets, terminal strips, coax connectors, fuses, TDZ Transmitters, Radar Transmitters BC-1335, Beacon Receivers, ARC-5's. Jack W3DJW TR 7-1008

Collins 75A-3 including matching speaker, 3 kc and 800 cycle mechanical filters, broad-band filter, and built-in Collins 100 kc calibration oscillator. All in perfect condition.
W3QZ0 VI 8-8112

Johnson Viking II and VFO built from kit with better-than-commercial wiring job. VFO mounted on special base that Automatically switches xmtr to "Spot" when VFO knob is touched. Transmitter has push-to-talk circuit and built-in Lynmar T-R switch. Also have Johnson Match Box. All in excellent condx.
W3QZ0 VI 8-8112

B&W Grid Dip Meter Complete with coils and working \$20.00
W3WNC

One Viking stereophonic TAPEDECK Model FF-75, like new.
One Viking pre-amplifier Model PB-60 for above tape deck.
One Fisher Hi-Low Filter system Model 50-F
All of above complete with Howard S. Sams schematic covering first two items for \$40.00 W3D\$G MO 4-9579

WANTED: Johnson Match-Box Contact K3GFM

Gonset II or II A 6 meters 6 or 12 volt W3DJW TR 7-1008

EACH YEAR the ARRL Field Day test should renew and demonstrate our individual and collective ability to set up radio communications in emergency! Civil defense as well as natural disasters may require all communications equipments and facilities that can be developed. We must maintain our operator ability and know-how and develop new ops with know-how! These FD rules are in the same successful pattern as last year. You can operate any consecutive 24 hours in the given 27-hour-period -- see Rule 5. Note the power-levels for multipliers below 30-watts (3) or 30-150 watts (2).

Our "FD" is a top operating activity of the year, and for individuals or pairs of operators afield, as well as clubs. The rules are flexible to fit large-group or individual plans. The ENTRY CLASSES are explained in Rule Four. We suggest that regardless of group plans all possible MOBILE UNITS available to a club or individually owned be TESTED. Check them out by at least one contact and message sent, in the FD! Clubs reporting their members' totals for an AGGREGATE MOBILE SCORE listing get a special listing in the report in QST. If all such equipments are registered for AREC-RACES, the Amateur Service should stand high in the estimation of that community.

Reporting forms on which to list FD contacts and make the necessary score computations are available from ARRL upon request after May 11th. You may of course make your own forms, but please be certain to include all information required by the rules. The rules below are those that will appear in the June '60 QST Field Day announcement. We suggest that you review the report on the last field day (see Dec. '59 QST p. 56) for hints and kinks relative to Field Day. You may wish to note other groups near you with similar operating set-ups and to issue a challenge.

Clubs and local emergency corps groups, both AREC and RACES are invited to support the 1960 Field Day. "There's nothing like an ARRL Field Day." Start your preparations now!

RULES

1. ELIGIBILITY: The Field Day is open to all radio amateurs in the sections listed on page 6 of QST.
2. OBJECT: For portable and mobile stations to work as many stations as possible; for home stations to work as many portable and mobile stations as possible.
3. CONDITIONS OF ENTRY: Each entrant agrees to be bound by the provisions of this announcement, the regulations of his licensing authority, and the decisions of the ARRL Contest Committee.
4. ENTRY CLASSIFICATION: All entries will be classified according to the maximum number of transmitters at any one time in simultaneous operation. They will be further classified as follows: "A" club or group portable stations; "B" unit or individual portable stations; "C" mobile stations; "D" home stations operating from emergency power; "E" home stations operating from commercial power sources. Thus a club or group running three transmitters simultaneously will be in the 3A classification, or a mobile station with one transmitter will be in the 1C classification.
Portable stations are those installed temporarily, for FD purposes, at sites away from customary fixed-station locations. Portable equipment or units must be placed under one call and the control of one licensee, for one entry. All control locations for equipment operating under one call must lie within a 1000-foot diameter circle.
Group participation is that portable-station work accomplished by 3 or more lic'd ops.
Unit or individual participation is that portable-station work accomplished by either 1 or 2 licensed operators.
Mobile stations are complete installations including power source and antenna, mounted in or on vehicles and capable of being used while in normal motion. If they utilize antenna supports not normal or suitable for use during motion, installations must be

60
classified as portable instead of mobiles. Each mobile entry call must be different from any other FD station participating.

Home-station participation is that work by fixed amateur stations not operating portable or mobile.

A transmitter used to contact one or more stations may not subsequently be used under more than one other station call during the Field Day period.

5. FIELD DAY PERIOD: The Field Day opens at 4:00 P.M. EST (or 1 P.M. PST) June 25. In the following 27-hour period, operation can be for any consecutive 24 hours. Operation can start everywhere at 4 P.M., 5 P.M., 6 P.M. or 7 P.M. EST, for example, but contemplates 24 hours continuous work for the test, all work of all stations concluded at 7 P.M. EST or earlier, on June 26. All contacts must be made during a 24-hr. period.

6. BANDS: Each phone and C.W. band is regarded as a separate band. The following (and additional u.h.f.-s.h.f. bands) constitute separate bands: A1: 1.800-1.825 "east" or 1.975-2.000 "west", 3.5-4.0, 7.0-7.3, 14.0-14.35, 21-21.45, 28.0-29.7, 50-54 and 144-148 Mc. A2: radioteletype and frequency-shift keying are grouped with A1, in the bands where they are allowed. A3: 1.800-1.825 "east" or 1.975-2.000 "west", 3.8-4.0, 7.2-7.3, 14.2-14.35, 21.25-21.45, 28.5-29.7, 50-54 and 144-148 Mc. All forms of voice transmission will be grouped with A3, in the bands where they are allowed. (In Canada and Cuba, their respective phone bands apply).

The use of more than one transmitter at one time in the same band is not allowed.

7. EXCHANGES: Signal reports and ARRL section (or specific location) must be exchanged in proof of contact.

8. VALID CONTACTS: In class A,B, and C, a valid contact is a completed exchange with any amateur station. In Classes D and E, a valid contact is a completed exchange with any station in Class A,B or C. Cross-band contacts are not allowed. Contacts by mobile stations may be made in motion or from any location(s). A station may be worked more than once only if additional contacts are made on different bands.

9. FIELD DAY MESSAGE: A Field Day Message is one originated by a Class A,B or C station and addressed to the SEC or SCM (see address in QST, p. 6) stating the number of operators, the field location, and the number of AREC members at the Field Day station. Only one Field Day message may be originated for credit.

10. SCORING:

Points: Each valid contact counts 1 point.

Credit for handling messages may be obtained only as follows: 25 points for originating one Field Day message to SEC or SCM. In addition, each Field Day Message received for relay will score 1 point when received by radio and 1 point when sent onward by radio. No FD message may pass through the same station twice. There will be a deduction of 10 points for omission of handling data or for defects in form. Copies of all messages originated and relayed must accompany Field Day reports.

Multipliers:

Power: Output-stage plate input under 30 watts, 3. Output-stage input over 30 and under 150 watts, 2. Output-stage plate input over 150 and to 1000 watts, 1.

Independence of Mains: All radio equipment independent of commercial power source: 3.

All radio equipment not independent of commercial power: 1

Battery Power: (applies to Classes B and C only): 1.5. The battery capacity or size shall in all cases be adequate to permit one hour's continuous operation of the station. Charging batteries from commercial mains while batteries are connected to transmitter or receiver voids the "independence-of-main" and "battery power" multipliers.

Multipliers do not apply to Class D and E entries.

Final Score: The final score equals the total "points" multiplier by the "power multiplier" multiplied by the "independence-of-mains" multiplier (multiplied by the "battery power" multiplier, if applicable). Where different multipliers apply during the Field

Day period, points are multiplied by the multiplier in effect at the time the points were earned.

11. CLUB AGGREGATE-MOBILE SCORES: Entries under Class C may be combined to form a "Club Aggregate-Mobile Score". The club name must be noted on the individual reports, and the club secretary must submit a claimed aggregate score. Credits to the extent supported by the reports submitted to ARRL will be allowed. Only bona fide members of the club, residing in the club territory, may contribute to the aggregate-mobile club listing.

12. REPORTING: Mail reports or entries in, on or before July 25. Reports must show bands used, dates and contact times, starting time and 24-hr. period, calls of stations worked, signal reports received and sent, and ARRL sections or locations of stations worked. Reports must show also power inputs and sources of power, location of station, the maximum number of transmitters in simultaneous operation, number of persons participating, and score computations.

SAMPLE SCORE: Assume a station operating in Class B with independent power and less than 30 watts input. If 27 valid contacts are made, 1 FD message originated, and 2 FD messages received and relayed, the score would be computed as follows: $27 + 25 + 4 = 56$ points. 56×3 (power below 30 watts) $\times 3$ (independent power) = CLAIMED SCORE of 504. If the station were using battery power, the claimed score would be: $1.5 \times 504 = 756$ (No battery multiplier on club scores of course.)

EXAMPLE OF OPERATING PERIOD: The above station W6---alerted its members to start June 27 (Sat.) at 1 P.M. PST; the generator team and antennas were not ready until 2:30 P.M. PST. As required in Rule 12 that was shown as the Starting Time, the contacts to this same hour 2:30 P.M. PST June 28th being the basis for score. (N.B.: There were three interruptions of 20 minutes each for gassing up...these did not permit any extension of operating time).

Phil-Mont Mobile Radio Club - 1960 Field Day Night

Valley Forge Mountain (Mt. Misery, Diamond Rock Hill)

FROM PHILADELPHIA VIA MCURRY KILL EXPRESSWAY: Take expressway to last exit before Turnpike (Valley Forge, Phoenixville exit). Turn right onto exit - continue turning right onto Route 23. Proceed on Rt. 23 past Valley Forge Golf Club and Milk Bar. At Milk Bar you will come to a fork in the road - continue straight (do NOT turn right). Continue on road through Valley Forge Park, passing Washington's Headquarters and Tourist Information Center. Continue straight on Rt. 23 to Atlantic Gas Station (on left-about 1/2 mile past Wash. Hq.) Turn left onto road near Atlantic Station - follow Phil-Mont signs to top of mountain. Also, follow signs for Valley Forge Mountain Homes.

VIA LANCASTER PIKE AND PAOLI: Proceed west on Lancaster Pike to Paoli. Turn right at Valley Rd. (near PRK station). Proceed on Valley Rd. under expressway - make a right then a left past Diamond Rock School. Proceed up hill, following Phil-Mont signs. Turn right at Army Nike entrance - continue on road past Nike sight - continue onto ungraded road. Just slush your way 1000 yards and you are there. If you are confused, ask for help on channel one.

Field day sight can be easily located at night by looking for red beacon light on radio tower. Microwave radio tower is just about five hundred feet from field day location.

If lost, ask how to get to
Valley Forge Mountain Homes.

ATTENTION ALL FIELD DAY PHIL - MONT MOBILES:

If possible, reduce transmitter power to 30 watts. This will give us a multiplier of 3 instead of 2. Do NOT get close to Phil-Mont truck W3RCZ or any other Phil-Mont mobile - stay far enough so that you will not block another receiver or splatter over the entire band. (Another Phil-Mont receiver that is) Have your message blank filled out and ready to send to W3RCZ when the circuit is quiet. If you find that you have worked all of the stations in the area on ten meters, try to work lower frequencies or move to different areas. If possible, try to work VHF bands from high locations.

I strongly urge all mobile members to make a complete test on their rigs. It would be a good idea to have your batteries charged before the contest. All members who do not have mobile rigs and wish to participate on Field Day, operating W3RCZ, kindly contact W3DJW - TR 7-1008.

SAMPLE FIELD DAY MESSAGE

NUMBER 1 (send only one)

FROM W3VVS/3 (Your call)

CHECK 24 (Number of words in message TEXT)

PLACE OR ORIGIN Edge Hill (Geographical Location)

TIME 0020 D.S.T.

DATE JUNE 26 1960 (Either June 25 1960 or June 26, 1960)

TO: Allen R. Breiner, W3ZKQ, 212 Race St., Tamaqua, Pa.

TEXT: THIS MOBILE FIELD DAY STATION IS OPERATING AT (location)

WITH NO (Number) OPERATORS ASSISTING ME. THERE ARE/IS ONE (number)

ARRC MEMBER(S) AT THIS STATION

SIGNATURE H.P. BOHLANDER W3VVS (Name and call).
PHIL-MONT MOBILE RADIO CLUB

Location.....

[illegible]

150 watts:-

Station..... Location.....

Scoring (Enter below on last sheet of each rig or band)

Nr. stns. worked ... contact points claimed:-

X 3 if both transmitter and receiver supplied from
independent power source:-

Power multiplier:

3 if transmitter input 30 watts or less, 2 if input between 30 and 150 watts, 1 if input more than

PHILMONT TERN - GRAM

JUNE 1960

HUM IN PHONE PATCHES

From "The Ground Wave"

HARVEY R. PIERCE W4OPA

HUM IN PHONE PATCHES IS USUALLY DUE TO ONE OF THREE SOURCES: FIRST, FROM THE PHONE LINES, SECOND, FROM 60 CYCLE MAGNETIC FIELDS, AND THIRD, FROM "GROUND LOOPS". WITH A LITTLE UNDERSTANDING OF THE PRINCIPLES INVOLVED IN HUM PICKUP, PHONE PATCH HUM CAN BE 99% ELIMINATED.

THE TELEPHONE COMPANY GOES TO GREAT LENGTHS TO KEEP POWER-LINE HUM OUT OF THEIR LINES AND PHONES BY CAREFULLY BALANCING EACH SIDE OF EVERY CIRCUIT TO GROUND, SO THAT FROM ONE SIDE OF THE LINE TO THE OTHER THERE IS NO HUM. BUT THERE IS HUM, AND A LOT OF IT, WHEN MEASURED FROM EITHER OR BOTH LINES TO GROUND. TO KEEP THIS HUM FROM LEAKING THROUGH A PHONE PATCH IT IS ONLY NECESSARY TO OBSERVE TWO PRECAUTIONS: FIRST, THE "LINE" WINDING OF THE PATCH TRANSFORMER SHOULD HAVE NO CONNECTION OR LEAKAGE TO GROUND, AND THE "LINE" CAPACITORS, COUPLING AND RF BYPASS, SHOULD BE THE SAME VALUE ON EACH LINE WIRE. SECOND, THE HIGH IMPEDANCE MICRO-PHONE WIRES MUST BE THOROUGHLY AND COMPLETELY SHIELDED FROM THE TELEPHONE WIRES. IF A SWITCH IS USED THAT SIMULTANEOUSLY SWITCHES THE "LINE" CONNECTIONS, MIKE CONNECTIONS, AND RECEIVER CONNECTIONS, THEN THE "MIKE" SECTION OF THE SWITCH MUST BE SHIELDED FROM THE LINE CONNECTIONS, OR HUM WILL RESULT. HOW TO DO THIS DEPENDS ON THE SWITCH USED, BUT USUALLY BITS OF COPPER OR TIN, BENT AND CUT TO FIT AROUND THE SWITCH LUGS AND GROUNDED, WILL DO THE JOB NICELY.

THE MAGNETIC FIELD SOURCE OF HUM IS OFTEN OVERLOOKED, BUT FREQUENTLY A PHONE PATCH IS PUT IN A CONVENIENT PLACE THAT JUST HAPPENS TO BE JAMMED TO THE END OF A RECEIVER OR TRANSMITTER AN INCH OR TWO FROM A POWER TRANSFORMER, AND THE RESULTANT INDUCED HUM CAN BE QUITE LOUD. THE OBVIOUS ANSWER IS TO PUT YOUR PHONE PATCH IN A SPOT WHERE THERE IS NO 60 CYCLE MAGNETIC FIELD, OR AT LEAST WHERE SUCH FIELDS ARE AT A MINIMUM.

THE SUBJECT OF "GROUND LOOPS" MAY BE MYSTERIOUS TO MANY, BUT IT MAY BE SIMPLIFIED BY SAYING THAT A "GROUND LOOP" IS FORMED WHENEVER THREE (OR MORE) UNITS ARE GROUNDED IN THE ORDER 1, to 2 to 3 --- to 1. IN OTHER WORDS, A LOOP IS FORMED BY THE GROUND WIRE CONNECTING ALL THE UNITS IN CIRCLE. LOOPS MAY BE SIMPLY AVOIDED BY GROUNDING IN THE ORDER 1 to 2, 1 to 3, 1 to ---, etc.; ALL GROUND WIRES CENTERING AT ONE POINT OR UNIT. ALTERNATELY, THE ORDER 1 to 2 to 3 to --- etc., MAY BE USED IN SOME INSTANCES. DO NOT RETURN TO #1.

GROUND LOOPS CAUSE HUM TROUBLE WHEN THE CIRCUIT ENABLES 60 CYCLE GROUND CURRENT TO FLOW THROUGH AN AUDIO GROUND. FOR INSTANCE, WHEN SOME 60 CYCLE CURRENT NORMALLY FLOWS FROM THE TRANSMITTER TO THE RECEIVER, PART OF IT MAY BE SHUNTED THROUGH THE PART OF THE GROUND LOOP FROM THE TRANSMITTER TO THE PATCH TO THE RECEIVER. THIS CURRENT IS THEN COUPLED TO THE MIKE INPUT BECAUSE THE MIKE WIRE PICKS IT UP FROM THE SHIELD. THIS IS CURRENT IN THE SHIELD, REMEMBER. THE REMEDY IS SIMPLE--DON'T GROUND THE PHONE PATCH TO THE RECEIVER. USE A SHIELDED WIRE IF YOU WANT, BUT DON'T CONNECT THE SHIELD TO THE RECEIVER AT ALL, JUST TO THE PATCH. THE GROUND RETURN FOR THE RECEIVER AUDIO OUTPUT WILL BE OK RUNNING THROUGH THE GROUND, RECEIVER TO TRANSMITTER TO PATCH.

IN CASE YOU ARE WONDERING HOW 60 CYCLE AC GETS INTO THE GROUND WIRE IN THE FIRST PLACE, REMEMBER THAT BOTH 117 VAC PRIMARY WIRES OF THE AVERAGE TRANSMITTER ARE EQUALLY BYPASSED (FOR TVI, etc.) TO THE CHASSIS, SO WITH NO GROUND ON THE TRANSMITTER ITS CHASSIS IS "FLOATING" AT ABOUT 55 VOLTS ABOVE GROUND, AND THE AVERAGE RECEIVER USUALLY HAS ONLY ONE SIDE OF THE 117 VOLT LINE BYPASSED TO THE CHASSIS, PUTTING ITS CHASSIS EITHER AT GROUND OR 117 V. POTENTIAL, DEPENDING ON HOW IT IS PLUGGED IN. THUS THERE IS ALWAYS A POTENTIAL DIFFERENCE BETWEEN AN UNGROUNDED RECEIVER AND AN UNGROUNDED TRANSMITTER, AS NO DOUBT MANY OF YOU HAVE UNHAPPILY DISCOVERED WHEN GETTING TICKLED AT ONE TIME OR ANOTHER. THE ACTUAL CURRENT IS LIMITED TO A FAIRLY LOW VALUE BY THE SMALL SIZES OF THE ACTUAL BYPASS CAPACITORS, BUT IT IS THERE, ALL RIGHT, AND CAN CAUSE TROUBLE. AND A GENUINE EARTH GROUND DOES NOTHING TO STOP IT, SO FAR AS GROUND LOOPS ARE CONCERNED, THOUGH IT MAKES THE STATION SETUP SAFER FROM SHOCK HAZARDS.

THERE ARE A FEW MINOR SOURCES OF HUM IN PHONE PATCHES, BUT THERE IS LITTLE THAT CAN BE DONE. FOR INSTANCE, THERE IS THE HUM THAT COMES ALONG WITH THE TELEPHONE CONVERSATION. IT VARIES FROM LINE TO LINE, AND IS SELDOM BOTHERSOME, AND IN ANY CASE IS THE PHONE COMPANYS WORRY. THEN THERE IS THE HUM THAT BACKS UP FROM YOUR RECEIVER INTO THE PATCH. NATURALLY, IF YOUR SPEAKER HUMS, YOUR PATCH WILL ALSO. MAYBE YOU CAN FIX YOUR RECEIVER. ELECTRONICS BEING WHAT IT IS, NO DOUBT THERE ARE A FEW MORE I HAVEN'T HEARD OF YET. BUT THE FIRST THREE MENTIONED ARE BEHIND 99% OF PHONE PATCH HUM. TAKE CARE OF THEM, AND YOU WILL PROBABLY HAVE A HUM-FREE PHONE PATCH.

OH YES! IN THE MATTER OF SHIELDING AGAINST LINE HUM, BE SURE THAT THE TRANSFORMER IN YOUR PATCH HAS THE "LINE" CONNECTIONS OR LEADS FAR AWAY FROM THE "MIKE" CONNECTIONS, SO THEY ARE, OR CAN BE, SHIELDED FROM EACH OTHER WITH A GROUNDED TERMINAL, SHEET, OR FRAME.